

**Gravatt, Dan**

---

**From:** McKernan, John  
**Sent:** Thursday, May 29, 2014 7:58 AM  
**To:** Gravatt, Dan; Field, Jeff; Tapia, Cecilia  
**Cc:** Carson, David; Tolaymat, Thabet; Bertram, Gary  
**Subject:** Draft deliberative: observations on the EMSI workplan, dated 5/16/2014  
**Attachments:** DraftDeliberative-ETSCObservationsPreconWorkPlan.doc

Dan, Cecilia and Jeff-

Attached are ETSC's observations and questions based on the EMSI workplan for removal action preconstruction work at west lake landfill. We hope they are helpful.

Thank you for the opportunity to review the report, and provide observations. Please feel free to contact me with any questions.

John

---

**From:** J McKernan  
**Sent:** Thursday, May 29, 2014 3:40:22 PM  
**To:** McKernan, John  
**Subject:** memo

0714

0401



3.0



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF RESEARCH AND DEVELOPMENT  
NATIONAL RISK MANAGEMENT RESEARCH LABORATORY  
ENGINEERING TECHNICAL SUPPORT CENTER  
CINCINNATI, OHIO 45268

May 29, 2014

**MEMORANDUM**

**SUBJECT:** Draft deliberative: Observations on the EMSI report: *Work Plan for Removal Action Preconstruction Work, West Lake Landfill Superfund Site*, Dated May 16, 2014

**FROM:** John McKernan, ScD, CIH  
Director, Engineering Technical Support Center (ETSC)

**TO:** Dan Gravatt  
RPM, U.S. EPA Region 7

This memorandum was prepared in response to your e-mail dated May 16, 2014, that requested ETSC's review of a report prepared by Engineering Management Support, Inc. (EMSI) regarding a preconstruction work plan at the Bridgeton Landfill and the West Lake Landfill. EMSI prepared its report to address the requirements of Paragraph 31a of the Administrative Settlement Agreement and Order on Consent (ASAOC) for Removal Action at the site.

The purpose of this document, prepared by the ETSC and its contractors, is to provide observations and questions related to our review of the referenced report. Comments provided herein are based on the following:

- A review of the May 16, 2014, EMSI report
- Historical documents and knowledge of the Bridgeton Landfill, including information on the sub-surface smoldering event (SSE) reaction and related data
- Previous reviews of the record of decision (ROD) and supplemental feasibility study (SFS) related to the radiologically-impacted materials (RIM) located in the Westlake Landfill
- Discussions held at the Bridgeton Landfill with representatives from EPA Region 7, Missouri Department of Natural Resources, the Bridgeton Landfill operator (i.e., Republic Services) and their contractors on April 15, 2014
- Our general knowledge of landfill operations

We developed this document to respond to each section (and, as applicable, the corresponding appendix) that was presented in the EMSI report. We reserve the right to modify our observations or commentary in the future as additional information becomes available.

Thank you for the opportunity to review and provide observations on the referenced report. Please feel free to contact me with any questions or comments.

**Section 1. Introduction**

- Section 1 provides background on the team that prepared the preconstruction work plan and provides the scope of the document, which is based directly on the requirements of the ASAOC. The ASAOC requires that the preconstruction work plan include or address the following:
  - Identify all potential and proposed areas on the site to be used for the staging, management, and relocation of excavated wastes associated with the construction of an isolation barrier
  - Clear all obstructive vegetation and surface obstacles that would be impediments to the installation of an isolation barrier or utilization of the proposed storage/staging areas
  - Develop a bird hazard mitigation and monitoring plan for ongoing landfill work
  - Develop an air monitoring and sampling plan to obtain background data and assess potential exposures in the community and demonstrate the effectiveness of any implemented control technologies
  - Install a mesh barrier inside the fenced area along St. Charles Rock Road to minimize and capture windblown solid waste during excavation activities
- We have no comments or questions on the content in Section 1 at this time.

## Section 2. Description of the Work to be Performed

### Section 2.1 – Identification of Waste Staging, Management and Relocation Area

- The language in this section (e.g., reference to a shallow excavation) suggests that one of the isolation barrier options has been selected. Per the meeting at the Bridgeton Landfill on April 15, three distinct options were discussed. Although the relative merits of the three options were examined and discussed during that meeting, we are not aware that any one isolation barrier design option was selected.
- Although it is acknowledged that none of the isolation barrier options have been fully designed, no preliminary engineering drawings of the proposed excavation or possible excavation areas were provided. Seeing the potential proposed isolation barrier alignment(s) would elucidate where the potential proposed area of excavation would be relative to the staging area(s) for the excavated material.
- Assuming the excavation is a truncated pyramid with all side slopes of 3 horizontal units to 1 vertical, we calculated the length of the shallow excavation to range from approximately 550 to 1,000 ft. Based on the information and assumptions provided in the EMSI report, the calculated depth of the isolation barrier was approximately 120 to 140 ft below the surface. This depth, although based on what were called preliminary dimensions in the EMSI report, exceeds the upper limit of the installed isolation barrier's maximum desired depth (80 ft) that was discussed by Bridgeton Landfill's contractors at the April 15, 2014 meeting.
- In the report there is a discussion regarding the extent and limits of OU-1 relative to the waste placed in the North Quarry, and references are provided to an aerial photograph from April 6, 1975. A scanned, legible copy of this photograph should be included because of the importance of the presence of OU-1 waste materials relative to the North Quarry waste when contemplating excavation area(s) associated with the isolation barrier.
- Specific locations and areas should be provided related to the destination of the excavated waste material. Only broad references (e.g., "southeast corner of Area 1") are provided and do not provide sufficient detail to understand what is being proposed.
- A reference to the "majority of waste to be relocated" was made related to the North Quarry's waste material, which could be construed to imply that materials associated with OU-1 would also be relocated during the excavation effort. This should be clarified. Furthermore, a conclusion is reached that waste materials placed after April 6, 1975 "do not contain or have the potential to contain RIM". The ASAOC states that in 1973, 8,700 tons of leached barium sulfate (i.e., the RIM) were mixed with 39,000 tons of soil and transported to the West Lake Landfill site. There is no indication of the specific time frames that the soil mixture was used as daily or intermediate cover at the landfill. Unless more detailed usage records of the RIM are available, it is unclear how the conclusion in the EMSI report (i.e., that no RIM was in use after April 6, 1975) could be reached.
- Quality assured (QA) data associated with previous GCPT testing conducted at the site were not provided or discussed. These data should be included in any evaluation of proposed excavation areas to understand the proximity of planned excavation areas to those areas that have been tested for the presence of RIM.
- The EMSI report suggests that, if the final volume of excavated material is greater than the estimated 50,000 to 95,000 bank cubic yards (bcy), that additional areas for placement of excavated waste material will need to be identified. It was not clear whether or not that additional area must be identified now (as part of the preconstruction work plan) or if this contingency area would need to be identified as part of the isolation barrier design. If the answer is in the former, then additional specificity needs to be provided.
- No information was provided on how the excavated materials would be managed on site. For example: how would leachate be controlled? And how would the materials be placed (e.g., loose or compacted)? Addressing these and other questions are needed to understand whether the proposed areas (once specifically identified) have the capacity to handle the anticipated volumes. The EMSI document suggests that potentially 'enhanced environmental controls' will be provided in the southeastern corner of Area 1, but no details were provided. We are not clear from the ASAOC whether that level of detail was required as part of the preconstruction work plan.
- Since the preconstruction work plan should address the management of all excavated materials, it appears appropriate that a discussion should be provided regarding how any identified RIM (based on testing conducted during excavation) would be managed.
- The EMSI report, in the last paragraph of Section 2.1, mentions that the development of maps and specific locations would be developed in the future. It is unclear why specifics and maps/drawings were not provided as part of this submittal package, particularly when the ASAOC appears to directly request this information as part of provision 30a.

### Section 2.2 – Vegetation and Surface Obstacle Clearing

- It is acknowledged that specific plans discussing the relocation of infrastructure components (e.g., landfill gas collection wells) may not be possible until the final isolation barrier design has been selected and completed. Therefore, it may not be possible to address the ASAOC provision 30b prior to developing the isolation barrier's design.
- It is unknown how much woody overgrowth exists in the areas proposed to be disturbed. If woody overgrowth exists, will it be left in place?

- It is unclear whether the stockpiled soil mentioned in paragraph 2, page 4 would be placed on top of the EVOH cap area of the North Quarry. The document states that erosion control fencing would be put into place. Typical practice for erosion control fencing includes staking the fencing at some interval (e.g., every 4 feet) to anchor it. If the erosion control fencing is to be staked into the ground surface, this would cause punctures in the EVOH liner (if the stockpile is to be located on top of the EVOH liner area), which could have an impact on landfill gas collection efficiency. Are there plans to place boots or other protective systems around any areas where the EVOH liner could be punctured?
- A large amount of exposed infrastructure is present in the North Quarry. Although the total (final) excavation volume may not be known at this time, spoil placement on top of the North Quarry crown could make access difficult for one or more gas extraction wells. An approximation of the soil volume to be removed as described in paragraph 2 of page 4 would be helpful to understand the magnitude of potential soil stockpiling needed.
- If RIM is detected on the surface, how thick would the proposed layer of rock be that would be placed on top of the given area? What would be the proposed extent of rock placement (e.g., would the additional rock be placed on top of the point of detection and extend to the adjacent transects?). What is the anticipated specification of the rock to be used?

### Section 2.3 – Bird Hazard Monitoring and Mitigation Plan for Ongoing Landfill Work

- The bird hazard mitigation plan provided in Appendix A of the EMSI report was developed for ongoing landfill work that involves limited waste disturbance. This level of detail is consistent with that required by the ASAOC.

### Section 2.4 – Air Monitoring, Sampling and QA/QC Plan

- It is stated that the U.S. EPA is developing off-site upwind and downwind sampling locations, and the ASAOC was cited as a reference for this statement. A review of the ASAOC did not reveal any statements that suggested the U.S. EPA was developing off-site upwind or downwind sampling locations. The reference or the statement should be corrected.
- Would the presence of RIM impact the planned constructed location of the air monitoring stations?
- It is not clear based on ASAOC item 30d what specifically must be monitored since it is only stated that the air monitoring must "...obtain background data and assess potential control technologies". Additional monitors to examine reduced sulfur compounds may be warranted if one of the goals is to evaluate migration and impacts from odors on the surrounding community. Reduced sulfur compounds could be a source of odors in addition to volatile organic compounds (VOCs), which EMSI stated will be included in the sampling capability of the air monitoring stations.
- In Table 1, which is the preliminary list of samplers for perimeter and on-site air monitoring and sampling, it is not clear which VOCs will be analyzed. It is also not clear what rationale was used to select the VOCs, and the objective of the sampling. Clarification is suggested.

### Section 2.5 – Litter Control Barriers

- It is not clear in the plan whether litter policing will occur once each day, twice each day, or at some other frequency. Clarification is suggested.
- The possibility of other approaches to minimize litter (such as daily or alternate daily cover) was mentioned for use during non-working periods, but the EMSI report indicated that details of these approaches will be developed as part of the isolation barrier design. It is not clear from the ASAOC whether all details of litter control (inclusive of these additional measures) have to be finalized as part of the preconstruction work plan or not. Therefore, we cannot determine that the litter control plans meet all requirements of the ASAOC.

## **Section 3. Schedule for the Work**

- In Table 2, which is the proposed schedule for preconstruction activities, it appears that the specific identification of the waste staging, management, and relocation area should be developed as part of the preconstruction work plan. The language in the schedule suggests that these items will be developed after approval of the preconstruction work plan.

## **Section 4. Project Team Organization**

- The entity conducting the excavation was not specified in the document. Therefore, it is presumed that the Bridgeton Landfill operator will be conducting the excavation, since the ASAOC states that the names and qualifications of contractors conducting the work should be provided.
- Some of the contractors listed in the organizational chart (e.g., Eurofins Air Toxics) do not have specific roles identified in the report narrative. Section 26 of the ASAOC states that the names and qualifications of all contractors must be provided within 10 days of the ASAOC. We are unsure if this information was furnished previously to U.S. EPA under separate cover.



## **Section 5. Health and Safety Plan**

- We have no comments or questions on the content in Section 5.

## **Section 6. Reporting and Deliverables**

### Section 6.1. Technical Deliverables

- It appears that Section 34b of the ASAO requires deliverables to be submitted in electronic format and hard copy format, while paragraph 1, page 11 of the EMSI report appears to suggest that electronic deliverables or paper copies or a combination will be submitted. We suggest that this be clarified.

### Section 6.2. Monthly Progress Reports

- As stated in 34a of the ASAO, it should be clarified that the first monthly progress report will be submitted 14 days after U.S. EPA's approval of the work plan.

Thank you for the opportunity to review and provide input on the referenced report. Please feel free to contact us with any questions or comments.